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PATENT GROUP GA030-43
GEORGIA-PACIFIC LLC
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ATLANTA, GA 30303-1847

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| EXAMINER |
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WOLLSCHLAGER, JEFFREY MICHAEL

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| ART UNIT | PAPER NUMBER |
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1791

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10/23/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/815,791 | | NECULESCU ET AL. | |
| | Examiner | | Art Unit | |
| | Jeff Wollschlager | | 1791 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 87-95 and 100-109 is/are pending in the application.
- 4a) Of the above claim(s) 87-95 and 109 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 100-108 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Arguments

Applicant's amendment to the claims filed August 1, 2007 has been entered. Claim 108 is currently amended. Claims 1-86 and 96-99 have been canceled. Claims 87-95 and 109 remain withdrawn from further consideration. Claims 100-108 are currently under examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 100-103 and 105-108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang (US 5,439,628) in view of Mitsuno et al. (EP 0 243 206) and any one of Young (Introduction to Polymers, pages 196, 204) or Watkins et al. (US 5,514,315) or Kojimoto et al. (US 4,248,651).

Regarding claims 98 and 108, Huang teaches the basic claimed process comprising thermoforming (col. 8, lines 1-5) a filled polypropylene sheet to produce a container wherein the

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container has a rough/coarse surface because of the filler particles effusing from the surface (col. 7, line 35- col. 8, line 5 and col. 6, lines 25-30). The filled sheet is extruded and calendered prior to the additional processing step of forming the articles, such as forming containers by thermoforming (col. 8, lines 53-62). Huang discloses mica as a suitable filler in a short list of fillers, but only exemplifies talc or calcium carbonate (col. 6, lines 24-45).

However, Mitsuno et al. disclose a polypropylene (page 3, lines 7-10) filled composition which provides improved properties (page 2, lines 48-51) wherein talc and/or mica alone or together are the employed fillers (page 3, lines 54-61) and the composition is used in various molding applications (col. 4, lines 52-55). Further, Mitsuno et al. appear to show their best physical property results, such as heat deformation temperature and adhesive strength, when employing mica and talc together (examples 19-22; Table 5).

Additionally, Huang does not disclose the temperature at which thermoforming is performed. However, Young teaches the melting point of polypropylene is about 368 °F and the glass transition temperature is about -10 °F; Watkins et al. disclose thermoforming a polypropylene sheet at about 340 °F (col. 3, lines 12-15); and Kojimoto et al. disclose thermoforming a polypropylene composite at about 150 °C/302 °F (col. 3, lines 35-48; col. 4, lines 29-41).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed mica as a filler in the method disclosed by Huang, as suggested by Mitsuno, for the purpose of producing a desired product with improved physical properties. It is further noted that Mitsuno et al., in addition to Huang, suggest that mica and talc are equivalent fillers suitable for the same purpose.

Further, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have optimized the thermoforming temperature to a

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temperature between the glass transition temperature and the melting point as is implicit in the term "thermoform" itself and as is demonstrated by each of Watkins et al. and Kojimoto et al. in their polypropylene thermoforming processes.

Finally, the examiner notes that the combination does not expressly teach the container has all the same claimed physical properties and effects. However, the combination teaches all claimed process steps, and employs all the claimed materials in the same claimed manner. As such, the claimed physical properties and effects are necessarily realized.

As to claims 100 and 101, Huang discloses thermoforming (col. 8, lines 1-5) in general and Watkins et al. disclose a female vacuum forming method (Figure 3; col. 3, lines 14-49).

As to claims 102, 103 and 105-107, Huang employs pre-blended/admixed titanium dioxide (Example 1) and polyvinylidene fluoride processing aids (col. 7, lines 1-22).

Claim 104 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huang (US 5,439,628) in view of Mitsuno et al. (EP 0 243 206) and any one of Young (Introduction to Polymers, pages 196, 204) or Watkins et al. (US 5,514,315) or Kojimoto et al. (US 4,248,651), as applied to claims 98, 100-103 and 105-108 above, and further in view of Nakazima (US 5,001,176).

Regarding claim 104, Huang teaches the basic claimed process as set forth above. Huang does not teach a silane-coupling agent. However, Nakazima teaches a silane-coupling agent (col. 4, lines 35-65).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed a silane coupling agent, as suggested by Nakazima in the process of Huang, since Nakazima suggests that such a coupling agent

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improves the bond between inorganic fillers such as mica and polyolefins such as polypropylene.

Response to Arguments

Applicant's arguments filed August 1, 2007 have been fully considered, but they are not persuasive.

Applicant's argument essentially alleges that Huang does not teach a micronodular surface. As an initial matter, the examiner notes that both applicant and the examiner appear to agree that a micronodular surface means a rough surface (page 7, 3rd full paragraph of the REMARKS filed August 1, 2007). The examiner submits that while Huang does mention the "smoothness" of the sheet he clearly states "the polypropylene sheet produced by the invented method requires no chemical treatment to make its surface rough and coarse to resemble paper because of the extra-fine filler particles effusing from its surface" (col. 7, lines 47-51).

Accordingly, the examiner submits that the most, if not only, reasonable conclusion from the teaching of Huang is that the surface is "rough" and "coarse". As both the examiner and applicant's REMARKS both agree that micronodular means rough, Huang teaches the argued micronodular limitation.

Further, regarding whether Watkins and Kojimoto are analogous art, the examiner submits that all of Huang, Watkins and Kojimoto are directed to thermoforming polypropylene sheet. Accordingly, the examiner submits the references are clearly analogous. Further, Watkins and Kojimoto are only applied to show routine thermoforming temperatures of polypropylene within the claimed range are known. The examiner further submits that even should Watkins and Kojimoto be withdrawn from the rejection, determination of the thermoforming temperature would have been readily optimized by the routinely skilled artisan through routine experimentation (MPEP 2144.05 II).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JW

Jeff Wollschlager
Examiner
Art Unit 1791

October 17, 2007

af
CHRISTINA JOHNSON
SUPERVISORY PATENT EXAMINER